

## ABSTRACT

A flexible and efficient apparatus and method of scanning switch matrix usable in user interface devices, e.g., a keypad or the like, having a number of switching elements, e.g., push buttons and/or switches, up to a twice the product of the number of rows and the number of columns. Each row and columns of the switch matrix are capable of being driven and being monitored during a scanning of the switch matrix for a presence of a closure of a switching element. The switch matrix device and the scanning method also allows integration of one or more switches in the switch matrix without the need for additional detection mechanisms dedicated to the switches.